SPECIFICATION AMENDMENTS:

Please replace the paragraph on page 6, lines 10 through 19, with the following amended paragraph:

The present invention provides a method of generating error detection codes for a recording data comprising the steps as follows. In the embodiment, a first error detection code ~~PEDC~~ is firstly derived by using 12 bytes unknown sector data information including ID, IED, RSV and the 2048 bytes main data while receiving main data from a host. Here, the first error detection code is preliminary generated, denoted PEDC hereinafter. Secondly, a second error detection code ~~MEDC~~ is obtained by using known 12 bytes sector data information including ID, IED, and RSV and the 2048 bytes main data. Here, the second error detection code is generated according to the known main data, denoted MEDC hereinafter. Thereafter, a logical operation of PEDC and MEDC is performed to obtain the ~~real~~ error detection code EDC.

Please replace the paragraph from page 7, line 21 through page 8, line 15, with the following amended paragraph:

FIG. 5 is a flowchart showing the method of generating error detection

codes according to the embodiment of the present invention. Firstly, when main data is transferred from a host, a first error detection code PEDC is figured out by applying the 12 bytes unknown sector data information including ID, IED, RSV and the 2048 bytes main data via Equation (1) (S510). Please note that while the main data is transferred from the host, the 12-byte sector data information is unknown, thus the 12-byte unknown sector data information is regarded as zero, i.e. those bytes $b_{16511} \sim b_{16416}$ are taken as zero in block S510. After the main data being written into a data sector of an ECC block, a second error detection code MEDC is obtained by applying the known 12-byte sector data information including ID, IED, RSV and the 2048 bytes main data via Equation (1) (S520). Please note that when writing the main data into the desired data sector, the sector data information is derived and the main data could be regarded as zero, i.e. those bytes $b_{16415} \sim b_{32}$ are taken as zero in block S520. Finally, by applying an exclusive-OR operation of PEDC and MEDC, the [[real]] error detection code EDC (S530) may be obtained and written into the data sector in DRAM. The equation is introduced as:

$$EDC = PEDC \oplus MEDC; \qquad \text{Equation (2)}$$

where $\oplus$ stands for the exclusive-OR operation.

Please replace the paragraph on page 9, lines 16 through 28, with the

following amended paragraph:

As a result, another way for calculating the second error detection code MEDC is introduced by providing a formula to reduce calculating time. By using the formula when calculating the second EDC (i.e. MEDC), the following 2048 bytes main data could be directly ~~skip~~ skipped after applying the 12 bytes sector data information into Equation (1). Still assume that the calculating time of a byte is 1T, thus the total calculating time for generating second detection code MEDC is 13T in the disclosed method, in which 12T is required for the 12 bytes sector data information and the extra 1T is required for processing the formula to skip the following 2048 bytes main data. Therefore, the calculating time for generating the second error detection code MEDC is mostly reduced.

Please replace the paragraph from page 9, line 29 through page 10, line 12, with the following amended paragraph:

By contrast, the conventional method for generating the error detection code is calculating ID, IED, RSV, and the main data. Thus, excessive data transmissions occur between the IC chip and the memory buffer (DRAM), which significantly wastes valuable DRAM bandwidth. However, a first error detection code is firstly generated according to the 12 bytes substitution sector data

information (i.e. for example "0") and the 2048 bytes main data in the present invention when reading the main data from the host. The second error detection code is then generated according to the 12-byte sector data information and the 2048-byte substitution main data (i.e. for example "0"). Thereafter a logic operation (i.e. the exclusive-OR operation) is performed to generate the [[real]] error detection code EDC the same as that derived by the conventional method.

Please replace the paragraph on page 10, lines 13 through 24, with the following amended paragraph:

The advantage of the method for generating the error detection code is that the data transmissions between the IC chip and the data buffer is significantly reduced than before. According to the present invention, the first error detection code PEDC is generated without knowing the sector data information while the main data is just received from the host pipe. Additionally, the second error detection code MEDC is generated without accessing the main data. Moreover, the [[real]] error detection code EDC is generated by using the 4-byte first error correction code PEDC and the 4-byte second error correction code MEDC without accessing the entire 2060 bytes sector data information and main data again.

Please replace the paragraph from page 10, line 25 through page 11, line 7, with the following amended paragraph:

Furthermore, for some cases that the same main data is repeatedly used to write into different data sectors (but with different sector data information), the first error detection code PEDC should be all the same due to the same main data. Therefore, the [[real]] error detection code EDC of each data sector including the identical main data could be obtained by operating on the same first error detection code PEDC, while the corresponding second error detection code MEDC may be generated according to respective sector data information and the same substitution main data. Accordingly, the performance of generating the error detection codes for those data sectors having the identical main data is significantly increased than before.